

Gateway

Vol. 3, No. 5
Oct. 24, 1986



The ARRL Packet-Radio Newsletter

HUDSON DIVISION TECHNICAL FORUM

A technical forum on the subject of computers and amateur radio, including packet radio, will be held on November 9, 1986 in Fishkill, NY. The forum will be held at the Holiday Inn at the junction of routes 9 and I-84. Talk-in will be via the Mt. Beacon repeater on 146.97 MHz.

From the POLI Parrot

NEW PACKET PERIODICAL FROM RSGB

The Radio Society of Great Britain has announced a brand new RSGB newsletter devoted to packet radio. A monthly newsletter, Connect International will include full-length technical articles, discussions of packet hardware, software and protocols, a beginners column, operating news, satellite and emergency communication and an international slant on packet. Ian Wade, G3NRW, will be editing the newsletter. Ian has been handling the "Data Comms" column in Radio Communication, the magazine of the RSGB.

Subscriptions for air-mail delivery of Connect International are 6.93 Pounds Sterling in North America to cover issues through June 1987, and 9.24 pounds annually thereafter (all subscriptions are renewed on July 1 annually).

From RSGB

TRAFFIC TO W1AW-4

Recently there has been a spate of messages arriving at the W1AW-4 packet bulletin board that relate to League business. FCC rules disallow use of amateur radio for communication involving the "regular business" of any organization, and that includes the ARRL! While ARRL volunteers, such as officials of the field organization, can discuss League affairs with one another on the air, communication with a paid employee of ARRL regarding League business is forbidden. Business traffic, in this context, means not only financial transactions, but any activity that an ARRL employee is paid to do, which covers just about everything that is done at HQ.

Please exercise discretion when sending messages to W1AW-4. If in doubt, call or write. If you are a BBS SYSOP, it would be helpful if you would keep an eye on the HQ-bound messages stored on your BBS and filter out ARRL-business ones. We appreciate the assistance.

From KE3Z

EXPANDED PACKET RADIO MAGAZINE

FADCA, the Florida Amateur Digital Communications Association, has announced the merger of their Packet Radio Magazine with the TAPR PSR Quarterly. The joint venture now encompasses a number of supporting packet groups: Alabama Packet Radio Association, Chicago Area Packet Radio Association, FADCA, Georgia Radio Amateur Packet Enthusiasts Society, Kansas City Area Packet Radio Group, Mid-Atlantic Packet Radio Council, Mississippi Amateur Radio Digital Association, Pacific Packet Radio Society, Rocky Mountain Packet Radio Association, TAPR and Utah Packet Radio Association. Subscription information is available through any of these organizations.

From Packet Radio Magazine

ALIAS, AKA: AN ID WHOSE TIME HAS GONE

Recently, the subject of the packet "alias" has become a topic of hot discussion within the packet-radio community. Basically, an alias is a replacement for the call sign normally found in the address field of an AX.25 frame; the address is what you see at the beginning of each frame when your TNC is in monitor mode. For example:

KE3Z-1>KB1MW,W1AW-5: Hello there!

indicates a transmission from KE3Z-1 to KB1MW through the W1AW-5 digipeater. An alias would replace the address of the station with a (presumably) more meaningful word or acronym. For example, if W1AW-5 used "ARRL" as an alias, the frame would be sent as:

KE3Z-1>KB1MW,ARRL: Hello there!

Currently, stations are using names, grid squares, three-letter airport identifiers and other abbreviations as aliases.

The idea behind the alias concept is that a meaningful word or abbreviation is easier for network users to remember than is a call sign, and in the event of a call sign change the station address would not need to change.

Normally, when a call sign is used as the address, station identification is automatic, as each transmission carries an identifiable call sign within it. With an alias, however, some other means must be found to identify the transmissions in order to comply with 97.84 of the FCC rules. Identification by stations using an alias is usually by means of a beacon transmission that periodically sends a frame containing text

identifying the station. This does appear to satisfy the legal requirement.

Now that we have seen why the alias is used and how it can be made legal, is it a good tool for packet radio? In my opinion it is not. There are several problems with aliases that are not soluble in the context of AX.25. The primary one is what I'll call data domain versus identification domain. The data domain is that region in which the data transmissions are received. Since a transmission from a given station can travel through as many as eight digipeaters, the data domain is obviously very large! It is also dynamic; a transmission can travel, theoretically, through a completely different digipeater path than that of the preceding or following transmissions. Thus the data domain is at once large and unpredictable. The identification domain, on the other hand, is both static and small. That is, the identification transmissions will always travel over the same path (using current TNCs, at least), which is typically very short (one digipeater or none). In fact, since the identification consists of redundant information, the path should be short. Even if one were to design a TNC that could beacon through all available paths, the resulting proliferation of identification transmissions would increase congestion on an already congested network.

So what is wrong with having different domains, you ask? Loss of network monitoring and control, and confusion among the network users, that's what! When you see a transmission on your screen from an alias station, how do you know what station made the transmission? You don't, unless 1) you have an alias book (the logical equivalent of a call book) or 2) you are in the identification domain of the station and care to wait for the next identification transmission. Why should you need to know what station is transmitting? Because we are all responsible for monitoring the network and informing the control operator of an automatically-controlled station about misuse or improper operation of his station. The FCC has made this point quite clear in their recent Memorandum Opinion and Order (FCC 86-427) [see Gateway Vol 3, No 4]. But how can we perform this function in the absence of a received identification? Obviously, if we need an alias book to solve the problem, we have made it more difficult for the network user, not easier.

Note that if we simply use call signs as addresses, none of the above problems exist; all of the identification information needed is within each transmission and travels over exactly the same path as the data, since the data and the identification are part of the same transmission.

What then do we do to simplify the growing problem of routing through the network? For now, nothing. If the network improves as hoped, the network will someday take care of routing the data and the user will only need to supply a destination address. When that day comes, and we all hope and expect it will be soon, the problem of knowing the path will solve itself. In the meantime, let's not make our monitoring and control task more difficult than it has to be; it's hard enough as it is.

DE KE3Z

CLUBS ARE TRUMP

Join the **Packeteers of Long Island (POLI)** for their voice net, Wednesday evenings at 9 PM (local time) on the 146.805 MHz repeater.

W3PYF reports that packet is an integral part of the process of putting together the **Delaware-Lehigh Valley ARC (DLARC)** club newsletter. Text for the **DLARC News** is sent to the KB3UD packet BBS, where editor KA3EED can download it for editing and printing. The applications of packet radio are never-ending!

Sweden's **Softnet User Group (SUG)** newsletter, **Softnet News**, reports that SUG has executed a licensing agreement with CT Electronics of Stockholm to produce turnkey Softnet nodes. Other Softnet news is that activity is rising. In Linköping, a total of 8 nodes are operational, of which at least 5 can be found on the air at any one time. SUG's Wallenberg nodes are starting to be deployed, the first being SKØCT in Stockholm with a node in Norrköping scheduled for installation this summer. [The Softnet packet system was described in the Second ARRL Computer Networking Conference.]

The Amateur Radio and Computer (AMRAC) club of Great Britain covers all aspects of computers in amateur radio but particularly packet. They publish a chatty newsletter, the **AMRAC User** with product reviews, tutorials and general interest articles and sponsor a packet repeater project. Further information can be obtained by contacting AMRAC at:

9 Hollydene Villas
Southampton Road
Hythe, Southampton
SO4 5HU

This regular feature in **Gateway** will report interesting activities happening at packet clubs throughout the world. Want to publicize your packet club's activities? Want to reach those local packeteers who aren't aware of your club? Put **Gateway** on the mailing list for your club newsletter:

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YAPP USERS BEWARE!

YAPP is a packet terminal program for the IBM PC written by WA7MBL. As with any software, you have to know how to use it, and this message received from WD4QQC points out how misuse can cause disk data to be corrupted.

I got a phone call last week from Jeff, WA7MBL, the author of YAPP, to discuss the disk crashing problem. After we talked a bit, he explained how the problem can happen. When you use the F9 gateway command to exit back to DOS with YAPP remaining resident, YAPP leaves all files in use, such as the logging file, open. If you change disks while YAPP is resident, YAPP, not knowing the disk has been changed, will write the directory and FAT of the old disk to the new one as it tries to close files. This process destroys

the disk contents. Since both the directory and FAT are corrupted, not even disk utilities such as Norton Utilities will be of much use in recovering the data.

Normally a terminate-and-stay-resident program would close all its working files as it exits and reopen them when you return to the program. Jeff said that Turbo-Pascal, the language he used, has a subtle bug in the file-open-for-append function that makes this difficult or impossible to do reliably. (Incidentally, he said that the same bug will sometimes crash his bbs software as the system tries to update the LOG.TNC file.)

Jeff suggested 2 things:

1) Warn people, and then warn them some more about not changing disks while YAPP is resident. Use ALT-X to exit completely from YAPP if you want to change disks or files. Note that the problem could also arise if you gateway from YAPP and use an editor to change a file in use by YAPP such as the log file.

2) If you must change a disk while YAPP is resident, you must restore the disk to its status at exit before you return to YAPP.

Jeff said that mine was the first reported problem because all of the users in his area run it from a hard disk and that he had never tested the program on a floppy. This should not affect hard disk users, but it will affect cartridge drive users (Bernoulli Box), like me for instance.

The new version of YAPP is making its way around the packet community and is well worth getting. But be aware that this bug exists and can really ruin your day (or at least a disk).

Via W2JUP TBBS

ELT SEARCH MISSION

On Saturday morning August 23, two-meter packet radio played an important role in locating an emergency locator transmitter (ELT) in the Florida Keys.

KI4T in Miami received a telephone call from K9CQ, a Civil Air Patrol officer, informing him that the Search and Rescue satellite (SARSAT) had heard a beacon on 121.5 MHz somewhere in the vicinity of Sugarloaf Key. He asked KI4T if he could reach Key West on packet, 150 miles distant, and ask the amateurs there if they could monitor 121.5 to verify the beacon.

A single digipeat through Plantation Key connected KI4T with K4OFG in Key West. K4OFG is the telecommunications officer for Monroe County.

K4OFG called Key West Center, who requested commercial airliners overflying Key West to listen for the beacon. The name and phone number of the Key West fixed station operator were sent via packet to KI4T, who relayed them to K9CQ.

A Coast Guard plane was dispatched and the ELT was soon located in a small plane sitting on the Sugarloaf Airport runway. A faulty switch on the ELT had set it off.

This incident points to another valuable use for packet radio. The accurate transmission of names and phone numbers as well as the ability to link across large distances makes packet a perfect tool for search and rescue.

From the FADCA>BEACON in Packet Radio Magazine

RUNNING THE WØRLI BBS ON AN IBM PC

[KØVLD has developed a program that runs the WØRLI packet bulletin board program on an IBM PC! Here, he describes the program and how you can get a copy.]

The popular WØRLI MailBox/GateWay program is written in Z80 assembly language and runs under the CP/M operating system using a customized BIOS (basic input/output system) for the Xerox 820 computer. Since the IBM PC and its "clones" use a different processor (an 8088), a different operating system (MS-DOS or PC-DOS) and different I/O hardware, it is impossible to run WØRLI's code directly on a PC. By using an emulator program, however, it is possible to create an environment within the PC to make the WØRLI code "think" it is running on a Xerox 820. Recently, I completed a program that does just that. This program emulates the Z80 microprocessor and the CP/M and BIOS environment in the Xerox 820, thus allowing an unmodified WØRLI program to be run on a PC.

In order to run the emulator and the MailBox program, the following are required:

- An IBM PC or clone with at least 256 kbytes of memory.
- At least one 5-1/4 inch floppy disk drive
- MS-DOS or PC-DOS version 2.1 or later
- One or two IBM PC compatible serial ports with modem cables to connect them to the TNCs
- One or two TAPR-compatible TNC(s)
- A copy of WØRLI's TNC.COM program and CONFIG.TNC file on an MS-DOS disk
- Your favorite editor for customizing the CONFIG.TNC file
- A copy of my emulator program (WORLICPM.EXE)

After customizing the CONFIG.TNC file just as you would on the Xerox 820 system, setting up your disk directories the way you want them for BBS operation, and connecting the TNCs to the serial ports, you run the emulator by typing:

WORLICPM TNC

The BBS then comes up exactly as it would on a Xerox 820.

The primary advantage of the emulator approach is that since the same code is run in the emulator as on the Xerox 820 version, any new features added to that program are immediately available on the PC version. The main disadvantage of using an emulator is speed. While I was developing the emulator, a major concern was whether it would be fast enough to provide reasonable performance in BBS operation. When the code was finished, I was pleasantly surprised to find that although it "feels" slightly slower than the Xerox 820 from the console, over the radio link there is virtually no perceptible difference in performance.

At the time of this writing (September 18), I have

had the code on the air for a week at my QTH, and I am getting ready to distribute several copies to selected alpha-test sites to give it the acid test before releasing it for wider distribution. I am presently completing some of the user documentation and making some distribution arrangements. I hope to be able to release it for general distribution in early November. Interim arrangements have been made with NØCCZ to handle the distribution of the software. Expect a few weeks delay until the first diskettes are mailed. For a copy of the emulator and WØRLI programs, send a blank diskette and a prepaid diskette mailer to:

Andy Freeborn, NØCCZ
5222 Borrego Drive
Colorado Springs, CO 80918

As with WØRLI, this program (with emulator source, if desired) will be available free of charge to the amateur packet radio community.

From the RMPRA>PACKET in Packet Radio Magazine

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Gateway: The ARRL Packet Radio Newsletter is published by the:

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Newington, CT 06111

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Subscriptions are available to ARRL members and nonmembers, at the following rates:

For 25 issues of Gateway:

In the US

ARRL Member \$6.00

Nonmember \$9.00

In the US, Canada and Mexico by First Class mail

ARRL Member \$11.00

Nonmember \$14.00

Elsewhere by Airmail

ARRL Member \$14.00

Nonmember \$17.00

Prices are subject to change without notice. Remittance must be in US funds, and checks must be drawn on a bank in the US.

Gateway: The ARRL
Packet Radio Newsletter
American Radio Relay League
225 Main St.
Newington, CT 06111

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